

WHAT IS CLAIMED IS:

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A1*

- 5 1. An immunogenic polypeptide comprising a sequence selected from the group consisting of residues 26 to 186 of SEQ ID NO: 23 to 45, and 55.
2. The immunogenic polypeptide of claim 1 further comprising about the N-terminal two thirds of the sequences selected from SEQ ID NO: 23 to 45, and 55.
- 10 3. The immunogenic polypeptide of claim 1 wherein said polypeptide has an amino acid sequence selected from the group consisting of SEQ ID NO: 23 to 45, and 55.
- 15 4. The immunogenic polypeptide of claim 1 wherein said sequence is SEQ ID NO: 55.
5. The immunogenic polypeptide of claim 2 wherein said sequence is SEQ ID NO: 55.
- 20 6. The immunogenic polypeptide of claim 3 wherein said sequence is SEQ ID NO: 55.
7. An isolated polynucleotide encoding a polypeptide of claim 1.
8. An isolated polynucleotide encoding a polypeptide of claim 3.
- 25 9. An isolated polynucleotide encoding a polypeptide of claim 6.
10. A vaccine composition comprising an immunogenically effective amount of an immunogenic polypeptide of claims 1, 2, or 3, wherein said immunogenic polypeptide is in a pharmacologically acceptable carrier.
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11. A vaccine composition comprising an immunogenically effective amount of an immunogenic polypeptide of claims 4, 5, or 6, wherein said immunogenic polypeptide is in a pharmacologically acceptable carrier.

5 12. A vaccine composition comprising an immunogenically effective amount of an immunogenic polypeptide of claims 6, wherein said immunogenic polypeptide is in a pharmacologically acceptable carrier.

10 13. An antibody that binds to a polypeptide having an amino acid sequence selected from SEQ ID NO: 23 to 45, and 55.

14. The antibody of claim 13 wherein said antibody is a monoclonal antibody.

15 15. A process for protecting against an enterobacillus-related disease in a patient at risk of contracting such disease comprising administering to said patient an effective amount of the vaccine composition of claim 10, 11 and 12.

20 16. The method of claim 15 wherein said disease is a urinary tract infection.

17. The method of claim 15 wherein the disease is a bladder infection.

25 18. The method of claim 15 wherein the disease is caused by a bacterium of the family Enterobacteriaceae.

19. The method of claim 18 wherein the bacterium is *E. coli*.

30 20. A process for treating an enterobacillus-related disease in a patient afflicted therewith comprising administering to said patient animal an effective amount of a vaccine composition of claim 10, 11 or 12.

21. The method of claim 20 wherein said disease is a urinary tract infection.

22. The method of claim 20 wherein the disease is a bladder infection.

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23. The method of claim 20 wherein the disease is caused by a bacterium of the family Enterobacteriaceae.

24. The method of claim 23 wherein the bacterium is *E. coli*.

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25. A process for treating an enterobacillus-related disease in a patient afflicted therewith comprising administering to said patient an effective amount of an antibody of claim 13 or 14.

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26. The method of claim 25 wherein said disease is a urinary tract infection.

27. The method of claim 25 wherein the disease is a bladder infection.

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28. The method of claim 25 wherein the disease is caused by a bacterium of the family Enterobacteriaceae.

29. The method of claim 28 wherein the bacterium is *E. coli*.

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30. A recombinant cell expressing a polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NO: 23 to 45, and 55.

31. The recombinant cell of claim 30 wherein the amino acid sequence is the sequence of SEQ ID NO: 55.

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32. A vector comprising a polynucleotide encoding a polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NO: 23 to 45, and 55.

5 33. The vector of claim 32 wherein the amino acid sequence is the sequence of SEQ ID NO: 55.

34. The vector of claim 32 wherein said vector comprises the plasmid pCGA139-1-1.

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35. The vector of claim 33 wherein said vector comprises the plasmid pCGA139-1-1.

36. A process for producing a polypeptide comprising expressing said
15 polypeptide from a recombinant cell containing the vector of claim 34.

37. The process of claim 36 wherein said polypeptide comprises an amino acid sequence selected from the group consisting of SEQ ID NO: 23 to 45, and 55.

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38. The process of claim 37 wherein said polypeptide further comprises a bacterial chaperone fused to a bacterial adhesin.